	European and Mediterranean Plant Protection Organisation		
	Organisation Européenne et Méditerranéenne pour la Protection des Plantes		
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			P IAS Point 5.2
	Guidelines on Pest Risk Analysis		
	Lignes directrices pour l'analyse du risque phytosanitaire		
	Decision-support scheme for quarantine pests		
PEST RISK ANALYSIS FOR Senecio inaequidens (CAV.)			
			The terms are used according to the IPPC Glossary of phytosanitary terms (ISPM n° 5
Pest risk analyst:			
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Stage 1: Initiation			
1 What is the reason for performing the PRA?		Identification of a single pest	*S. inaequidens* originates from South Africa, and was introduced into Europe with imports of wool. Its presence was first recorded in 1889 in Germany, 1922 in Belgium, 1928 in Scotland, 1935 in France and 1947 in Italy. From these foci, *S. inaequidens* started to spread to other European countries in the 1970s and is considered an invasive plant in many of these countries and

		have detrimental effects on the use of land and on the environement.
2 Enter the name of the pest		*Senecio inaequidens* DC.
2A Indicate the type of the pest	plant	
2B Indicate the taxonomic position		Plantae – Asteraceae
3 Clearly define the PRA area		EPPO region
4 Does a relevant earlier PRA exist?	No	
Stage 2A: Pest Risk Assessment - Pest categorization		
5A If you are sure that the pest clearly presents a risk, or that in any case a full Pest Risk Assessment is required, you can omit this section and proceed directly to the main Pest Risk Assessment section.	Continue with Pest Categorization	
6 Does the name you have given for the organism correspond to a single taxonomic entity which can be adequately distinguished from other entities of the same rank?	yes	A chromosome number of 2n= 40 is reported for *S. inaequidens* in Europe (Chichiricco *et al.,* 1979), and Hunziker *et al*. (1989) reported 2n=20 for *S. madagascariensis* in Argentina (see notes on taxonomy and nomenclature). According to a recent study, plants in the *Senecio inaequidens* complex are presently invasive in Europe, Australia and South-America. Previously, different ploidy levels have been found in these different areas with only tetraploid individuals reported in Europe, and only diploids in South-Africa and Australia. Moreover, based on genome size, the authors suggest that two largely allopatric varieties of diploids exist in South-Africa. The Mexican individual was diploid. The authors suggest that European tetraploid individuals come from South-Africa and hypothesize that a hybridization event between the two DNA types of diploids occurred in the Lesotho area (Lafuma et al. 2003). For future PRAs, the Secretariat suggests that this information should appear in the Datasheet and no longer in the PRA record.

8 Is the organism in its area of current distribution a known pest (or vector of a pest) of plants or plant products?	yes	Due to differences in ploidy levels (see 6), the organism is not considered a pest in its native range. It is widely distributed in Western Europe where it is considered as a weed in vineyards and pastures, and its dense populations may reduce biodiversity.
10 Does the pest occur in the PRA area?	yes	The first European data originated from Germany in 1889 (WAGENITZ 1987, MEUSEL - JÄGER 1992). The first populations have been found in wool industry areas (PROBST 1949), where the first established individuals were it occurred in very few localities till 1970's. (BÜSCHER 1989) - but in MEUSEL - JÄGER (l. c.)'s opinion a small spreading was observed in the 1950's. After this. the species has been spread in Europe. The expanding of *Senecio inaequidens* is in progress. **EPPO region: Austria** (POLATSCHEK 1984, MELZER 1991, MELZER - BARTHA 1991, 1992, 1993, 1995, MELZER - BREGNANT 1993), **Belgium** (MOSSERAY 1936, LAMBINON 1957, LAMBINON et al. 1992), **Czech Republic** (Pysek et al. 2002), **Denmark (**SKOVGAARD 1993), **Finland** (KURTTO - HELYNRANTA 1998), **France** (MEUSEL - JÄGER 1992, ANTOINE - WEILL 1966, JOVET - BOSSERDET 1968, SENAY 1944, LEREDDE 1945, MULLER 2004), **Germany** (WAGENITZ 1987, BÜSCHER 1989, DICKORÉ – ADOLPHI 1977, STIEGLITZ 1981, KORNECK 1982, SAUERWEIN 1986, MOLL 1989, ZIENERT – SCHOLZ 1994, BRENNENSTUHL 1995, KÖNIG 1995, GAIDA – SCHNEIDER-GAIDA 1999, KUHBIER 1977, OBERDORFER 1994, RADKOWITSCH, 1997 MEUSEL - JÄGER 1992), **Italy** (KIEM 1975, 1976; PIGNATTI 1982, CONSTANTINI – DE KOCK 1993, HEGER – BÖHMER 2005), **Hungary** (DANCZA – KIRÁLY 2000), **The Netherlands** (WEEDA et al. 1991, MENNEMA et al. 1985, ERNST 1998), Norway (OFTEN 1997), **Slovenia** (KALIGARIC 1992, PAVLETIC - TRINAJSTIC 1994), **Spain** (POLATSCHEK 1984, BOLOS et al. (1990), **Sweden** (LJUNGSTRAND 2000), **Switzerland** (MEUSEL - JÄGER 1992, MAYOR 1996, LAUBER - WAGNER 1998), **United Kingdom** including **Northern-Ireland** (LOUSLEY 1961, MEUSEL - JÄGER 1992, CLIVE 1992). Although the CABI Crop Protection Compendium contains data on *Senecio inaequidens* from Poland, it is only mantioned in "Checklist of Flowering Plants and Pteridophytes of Poland" as ephemerophyte noted in Krakow in 90ies (MIREK et. al. 2002), in fact the recent Poland data base does not contain it (MIREK et. al. 2005).
11 Is the pest widely distributed in the PRA area?	widely distributed	Up to now, it has spread in North, West, Central and South Europe. It is present in huge quantities in France.

		It has not yet been reported from Albania, Bulgaria, Greece, Croatia, Poland, Romania, Slovakia and Former Soviet Union countries.
12 Does at least one host-plant species (for pests directly affecting plants) or one suitable habitat (for non parasitic plants) occur in the PRA area (outdoors, in protected cultivation or both)?	yes	*S. inaequidens* colonizes open and disturbed lands: wastelands, fallows, railway tracks and roadsides, wastlands and other disturbed locations, crops (mainly vineyards), burnt land and pastures. It is also found in natural environments such as dunes and cliffs in littoral areas, and temporary ponds in France (Brunel, 2003).
14 Does the known area of current distribution of the pest include ecoclimatic conditions comparable with those of the PRA area or sufficiently similar for the pest to survive and thrive (consider also protected conditions)?	yes	The plant is already established, and naturalised in significant areas in Mediterranean and temperate zones of the PRA area.
15 Could the pest by itself, or acting as a vector, cause significant damage or loss to plants or other negative economic impacts (on the environment, on society, on export markets) ?	yes	*S. inaequidens* is reported as a weed, which reproduces significantly in vineyards (MICHEZ, 1994; MAYOR, 1996) and reduces the value of invaded pastures (BRUNEL, 2003). It may also be considered a nuisance in the management of railway tracks and motorway verges and is an unsightly colonizer of wastelands. Like the native *S. jacobaea, S. inaequidens* is toxic to livestock and human, but it is not generally eaten. A veterinary article shows the effect of *Senecio inaequidens* on horses health (intoxications) in the South of France (SARCEY et al. 1992). *S. inaequidens* develops dense populations in ruderal habitats, potentially interfering with their management and improvement. When invading open rock vegetation it may threaten rare or endangered species. It is also known to invade natural habitats in France, and could threaten biodiversity with impacts on the native *Centaurea corymbosa* (Agence Méditerranéenne de l'Environnement – Fiche no. 15. *Senecio inaequidens*. http://www.ame-lr.org/plantesenvahissantes/)
16 This pest could present a risk to the PRA area.		The plant is known to be invasive in the EPPO region. It has the potential to spread further in EPPO countries where it is already present and to be introduced in other countries where it is not already recorded.

		There is a high risk of establishment and spread of *Senecio inaequidens* in cultivated areas (vineyards, pastures) and natural areas (natural grasslands and abandoned and unmanaged areas).
Section 2B: Pest Risk Assessment - Probability of introduction/spread and of potential economic consequences		
Note: If the most important pathway is intentional import, do not consider entry, but go directly to establishment. Spread from the intended habitat to the unintended habitat, which is a, whichant judgement for intentionally imported organisms, is covered by questions 1.33 and 1.35.	Continue with questions of entry	
1.2 Note down the relevant pathways, then estimate the total number of distinct pathways, by multiplying the number of relevant pathways by the number of relevant origins and the number of relevant end uses.	many	Huge number of achenes (on average, 10 000 seeds are produced per plant and per year) of the plant are naturally dispersed by the wind. The plant spreads naturally via road and rail vehicles over long distances (Ernst, 1998). Now that the plant is present in Europe, its main way of spreading is natural. These achenes could potentially be present in all the exported commodities: consignments of hay, consignments of grain during the transport, in the soil of ornamental plants for planting, in soil/growing medium (with organic matters) as a commodity, in soil as a contaminant (on used machinery and footwear). Locally, the plant can also be spread by wild animals (birds, mammals) and domesticated animals such as sheep, goat, cows,… In the past, the plant has been introduced in Europe from South Africa because of importation of sheep wool. This pathway is also considered minor compared to natural spread. Intentional introduction for ornamental purposes is not considered as the plant is not recorded as being traded.

The overall probability of entry should be described and risks presented by different pathways should be identified.		As natural spread is the major pathway, measures are not justified and risk should be accepted because it is not manageable.
1.16 Specify the host plant species (for pests directly affecting plants) or suitable habitats (for non parasitic plants) present in the PRA area.	Many	*S. inaequidens* has a wide range of habitats. It grows along roads and railways, river banks, wastelands. It is also found in forests (in open places after logging or a fire), in crops (particularly grapevine), fallows, pastures (EPPO data sheet on Invasive Plants *Senecio inaequidens* 2005, 05–11836). It is also found in natural environments such as dunes and cliffs in littoral areas in France (BRUNEL, 2003).
1.17 How widely distributed are the host plants or suitable habitats in the PRA area? (specify)	widely	These habitats are very common.
1.18 If an alternate host is needed to complete the life cycle, how widespread are alternate host plants in the PRA area?	irrelevant	No alternate host needed.
1.19 Does the pest require other species for critical stages in its life cycle such as transmission, (e.g. vectors), growth (e.g. root symbionts), reproduction (e.g. pollinators) or spread (e.g. seed dispersers) ?	no	
1.19A Specify the area where host plants (for pests directly affecting plants) or suitable habitats (for non parasitic plants) are present (cf. QQ 1.16-1.19). This is the area for which the environment is to be assessed in this section. If this area is much smaller than the PRA area, this fact will be used in defining the endangered area.		Suitable habitats previously described are widespread in the whole EPPO area (roadsides, pastures,…)

1.20 How similar are the climatic conditions that would affect pest establishment, in the PRA area and in the area of current distribution?	Largely similar	*S. inaequidens* is associated with areas with a warm to hot wet summer and a cool winter (dry or wet). It is hardy and well adapted to zone 7 (-18 to –12°C). It is associated with the vegetation zones: temperate deciduous forests and temperate steppes (EPPO data sheet on Invasive Plants *Senecio inaequidens* 2005, 05–11836). RADKOWITSCH (1997) compares different climatic factors. According to these results, establishment depends on the length of the vegetation period (optimum: 230-260 days above 5 C°) and on summer temperature (>12 C°), winter temperature has no effect.
1.21 How similar are other abiotic factors that would affect pest establishment, in the PRA area and in the current area of distribution?	largely similar	According to a study using Ellenberg indicator values, *S. inaequidens* occurs in full light, at moderately high soil pH and low to medium soil water saturation. The soil reaction value indicates that *S. inaequidens* is a frequent plant, mostly on basic soils (BORNKAMM 2002), but has a broad ecological amplitude. Comparisons with data in literature from W and NW Germany show a broader sociological and ecological amplitude of *S. inaequidens* in this area, which was colonized by this species in the 1970s.
1.22 If protected cultivation is important in the PRA area, how often has the pest been recorded on crops in protected cultivation elsewhere?	no judgement	No record of infested protected cultivation has been reported.
1.23 How likely is establishment to be prevented by competition from existing species in the PRA area?	very unlikely	*S. inaequidens* is a weak competitor, but establishes rapidly in open vegetation.
1.24 How likely is establishment to be prevented by natural enemies already present in the PRA area?	unlikely	Up to now, 62 phytophagous insects have been observed feeding on *S. inaequidens* in Europe. Of these, 11 only feed on flowers and fruits, therefore 51 affect the growth of the plants. Three of these species are specialists for the genus *Senecio*, and three for *Asteraceae* (Hunger *et al.,* 2005). The aphid *Aphis jacobaeae*, associated with the European native *S. jacobaea*, has been observed to attack and cause damage to *S. inaequidens* in France and is considered as a potential biocontrol agent (Fort *et al.*, 2003).
1.25 To what extent is the managed environment in the PRA area favourable for establishment?	slightly favourable	The entire PRA area is slightly favourable. *S. inaequidens* is known as invasive in pastures and vineyards.

1.26 How likely are existing control or husbandry measures to prevent establishment of the pest?	Very unlikely	Control measures are available (mechanical or chemical control) but are of uncertain success. According to Hungarian experiences the permitted herbicides in railway sites are effective against *Senecio inaequidens* at the beginning of the establishment stage.
1.27 How likely is it that the pest could be eradicated from the PRA area ?	unlikely in establish-ment stage very unlikely in heavy infested areas (see below)	*S. inaequidens* is a half-shrub. In the first year the plant may be sensitive against dicotyledonous herbicides. After the second year the total herbicide use is necessary before flowering period. Mechanical control is effective only in case of regular cutting or moving or hand-pulling (and before flowering). Herbicide resistance was found in the native *Senecio vulgaris* species (http://www.weedscience.org/in.asp)
1.28 How likely is the reproductive strategy of the pest and the duration of its life cycle to aid establishment?	very likely	*S. inaequidens* flowers from the beginning of May to late autumn in Europe, and produces thousands of fertile achenes from June to January.
1.29 How likely are relatively small populations or populations of low genetic diversity to becomeestablished?	Very likely	There are no indications that low diversity would limit establishment.
1.30 How adaptable is the pest? Adaptability is:	High	The species is widespread in the Western and Southern parts of Europe, suggesting that this species is adaptable.
1.31 How often has the pest been introduced into new areas outside its original area of distribution? (specify the instances, if possible)	often	The plant is present on the 5 continents, with different ploidy levels. It is also present in several contries of the EPPO region.

1.32 Even if permanent establishment of the pest is unlikely, how likely are transient populations to occur in the PRA area through natural migration or entry through man's activities (including intentional release into the environment)?		Permanent establishment is possible.
1.33 How likely is the pest to spread rapidly in the PRA area by natural means?	short distance: very likely long distance: moderately likely	The spread by wind and other means over short distances is very likely. For long distance, achenes are mainly transported by wind, but also by water, animals and human activities (especially railways).
1.34 How likely is the pest to spread rapidly in the PRA area by human assistance?	very likely	Achenes travel in the slipstream of cars and trains and directly on the cars (e.g., in tires). They may also be transported by people in clothes and shoes, or in consignements of hay, with livestock,… see for question: 1.33
1.35 How likely is it that the spread of the pest could be contained within the PRA area?	Very unlikely	Seeds travel freely and control of established plants is difficult.
The overall probability of introduction and spread should be described. The probability of introduction and spread may be expressed by comparison with PRAs on other pests.	high	*S. inaequidens* is a widespread invasive alien plant in Southern and Western Europe. The infestation level is usually very high. This species spreads from West and South to East Europe. The international railway and motorway networks are suitable to assist its spreading over long distances across Europe. The small achenes can attach to any consignments or vehicle. Although Germany is already very infested by *S. inaequidens*, Poland is still free of this plant. It may be hypothesized that the future infestations depend on the international road and rail connections. For example the Hungarian infested areas are situated mainly along the Wien – Budapest international railway line.

1.36 Based on the answers to questions 1.16 to 1.35 identify the part of the PRA where presence of host plants or suitable habitats and ecological factors favour the establishment and spread of the pest to define the endangered area.		The climatic factors are suitable for establishment in the following EPPO countries in the temperate zone, where *S. inaequidens* has not already appeared: Albania, Algeria, Belarus, Bulgaria, Croatia, Cyprus, Estonia, Greece, Israel, Jordan, Latvia, Lithuania, Moldova, Montenegro, Morocco, Poland, Portugal, Republic of Macedonia, Romania, Russia, Serbia, Slovakia, Tunisia, Turkey, Ukraine. Moreover, the plant represent a danger where it is already present: Austria, Belgium, Czech Republic, Denmark, England, Finland, France, Germany, Hungary, Italy (including Sardinia), the Netherlands, Northern Ireland, Norway, Slovenia, Spain, Sweden, Switzerland, Wales. See climex maps at the end of this document.
2.0 For the following questions, will you be considering all hosts/habitats together or specific case(s)?	all habitats	
Identify the host/habitat		*S. inaequidens* has a wide range of habitats but it prefers well-drained and disturbed soils. It grows and have negative effects along roads and railways, river banks, wastelands. It is also found in forests (in open places after logging or a fire), in crops (particularly grapevine), fallows, pastures.
2.1 How great a negative effect does the pest have on crop yield and/or quality to cultivated plants or on control costs within its current area of distribution?	moderate	In its native range, the plant does not threaten crops.
2.2 How great a negative effect is the pest likely to have on crop yield and/or quality in the PRA area?	moderate	Till now, *S. inaequidens* is predominantly found in ruderal habitats in Europe, though occurrence in wheat fields is principally possible. It affects pastures and vineyards.
2.3 How great an increase in production costs (including control costs) is likely to be caused by the pest in the PRA area?	major	There is an increase in production costs due to the use of management methods (mechanical and chemical control + hand weeding). Same consequences on land value could occur in the endangered area.

2.4 How great a reduction in consumer demand is the pest likely to cause in the PRA area?	Moderatly likely	Maybe on milk and honey (see question 2.8)
2.5 How important is environmental damage caused by the pest within its current area of distribution?	/	In South Africa, the plant is native and is not considered a weed. There are no data for the other areas colonized.
2.6 How important is the environmental damage likely to be in the PRA area (see note for question 2.5)?	major	According to HILLIARD in WERNER et al. (1991) the competitive ability of *S. inaequidens* is weak, that is why it is attached to competition free sites. Its achenes germinate in full light only. On the basis of this germination strategy *S. inaequidens* cannot become a serious problem in closed semi-natural communities (WIENERS in GAIDA – SCHNEIDER-GAIDA 1999), but open communities are endangered. The plant invades natural wet grasslands (quite rare ecosystems). It is present in several natural reserves in the South of France. These structures spent a lot of ressources in managing *S. inaequidens.* (Agence Méditerranéenne de l'Environnement – Fiche no. 15. *Senecio inaequidens*. http://www.ame-lr.org/plantesenvahissantes/).
2.7 How important is social damage caused by the pest within its current area of distribution?	minor	No social damage recorded in its current area of distribution.
2.8 How important is the social damage likely to be in the PRA area?	moderate	Like the native *S. jacobaea, S. inaequidens* is toxic to livestock and humans, as they contain pyrrolizidine alkaloids. In Switzerland, there is a concern about all *Senecio* spp. because of their toxicity to livestock. In addition, alkaloids from *Senecio* spp. pass into milk, which cannot then be consumed (Buholzer S, pers. comm., 2005). *S. inaequidens* is also a honey plant, in South of France, honey has been reported to contain the *Senecio* alkaloids. However, its consequences on honey composition are not well known (Brunel, 2003). The plant is poisonous to horses and may provoke their death (Sarcey *et al*., 1992). Moreover, these plants modify landscapes, as they can flower all year round and cover large surfaces.
2.9 How likely is the presence of the pest in the PRA area to cause losses in export markets?	unlikely	The plant is already introduced, and pathways are minor sources of introduction compared to natural spread.

2.9A As noted in the introduction to section 2, the evaluation of the following questions may not be necessary if any of the responses to questions 2.2, 2.3, 2.4, 2.6 or 2.8 is "major or massive" or "likely or very likely". In view of these resposes, is a detailed study of impacts required?	yes	
2.10 How easily can the pest be controlled in the PRA area?	with much difficulty	The control is difficult in establishment stage and close to impossible in heavy infested areas (see question 1.27).
2.11 How probable is it that natural enemies, already present in the PRA area, will suppress populations of the pest if introduced?	unlikely	Biological control has been undertaken in South Africa but the natural enemies are not present in the PRA area.
2.12 How likely are control measures to disrupt existing biological or integrated systems for control of other pests or to have negative effects on the environment?	moderately likely	The aphid *Aphis jacobaeae* has been observed to attack and cause damage to *S. inaequidens* (BRUNEL, 2003). The fact that this insect could be a potential biological control agent is under study. After several years of establishment in a country, the species seems to be limited by predators.
2.13 How important would other costs resulting from introduction be?	major	Costs of monitoring and costs of communication to the public in all the countries affected or at risk, costs of eradication and control.
2.14 How likely is it that genetic traits can be carried to other species, modifying their genetic nature and making them more serious plant pests?	unlikely	Several native *Senecio* species may hybridize with the *S. inaequidens*. The probability in the EPPO region is small. Hybridization with other species has not been reported.
2.15 How likely is the pest to act as a vector or host for other pests?	unlikely	No elements recorded.
2.15A Do you wish to consider the questions 2.1 to 2.15 again for further hosts/habitats?	No	

2.16 Referring back to the conclusion on endangered area (1.36), identify the parts of the PRA area where the pest can establish and which are economically most at risk.		Eastern countries and Eastern Mediterranean Basin are at risk.
2.16A Estimation of the probability of introduction of a pest and of its economic consequences involves many uncertainties. In particular, this estimation is an extrapolation from the situation where the pest occurs to the hypothetical situation in the PRA area. It is important to document the areas of uncertainty and the degree of uncertainty in the assessment, and to indicate where expert judgement has been used. This is necessary for transparency and may also be useful for identifying and prioritizing research needs. It should be noted that the assessment of the probability and consequences of environmental hazards of pests of uncultivated plants often involves greater uncertainty than for pests of cultivated plants. This is due to the lack of information, additional complexity associated with ecosystems, and variability associated with pests, hosts or habitats.		When performing the PRA the following uncertainties have been identified: - rapidity of natural spread. - Invasiveness status in Germany, Czeck Republic (Casual), Hungary (naturalised), Northern Ireland,… and ability to invade in such climates.
Evaluate the probability of entry and indicate the elements which make entry most likely or those that make it least likely. Identify the pathways in order of risk and compare their importance in practice.	Very likely	The species is already present in many EPPO countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Italy, Hungary, the Netherlands, Slovenia, Spain, Switzerland, United Kingdom, and Northern-Ireland. The key pathway is natural spread.
Evaluate the probability of establishment, and indicate the elements which make establishment most likely or those that make it least likely. Specify which part of the PRA area presents the greatest risk of establishment.	Very likely	*S. inaequidens* is able to survive in a variety of biotopes with open vegetation, e.g., ruderal sites along traffic lines, dry grassland, rock vegetation, possibly also agricultural fields. Its climate requirements are met by much of the EPPO region. Therefore establishment after introduction is very likely in many, if not all, countries within the EPPO region.

List the most important potential economic impacts, and estimate how likely they are to arise in the PRA area. Specify which part of the PRA area is economically most at risk.		The economic impact, once *S. inaequidens* is established, is uncertain. It may become a weed of vineyards and pastures, and possibly other crops. Eradication is very expensive and regular management costs will rise as well. Waiting for an answer of Jacques Maillet on management costs in natural areas and pastures. It is difficult to assess the costs in vineyards as treatments are used for all the weeds present (J. Maillet, pers. com., 2006). Invasion and spread of *S. inaequidens* causes impacts on the biodiversity in semi-natural and natural ecosystems.
The risk assessor should give an overall conclusion on the pest risk assessment and an opinion as to whether the pest or pathway assessed is an appropriate candidate for stage 3 of the PRA: the selection of risk management options, and an estimation of the pest risk associated.		*S. inaequidens* is already introduced in several countries in the PRA area and evidence shows that the species is able to establish in a variety of habitats to become a pest, thereby threatening biodiversity of the area. Control is very difficult and expensive. The overall conclusion is that *Senecio inaequidens* is an appropriate candidate for stage 3 of the PRA.

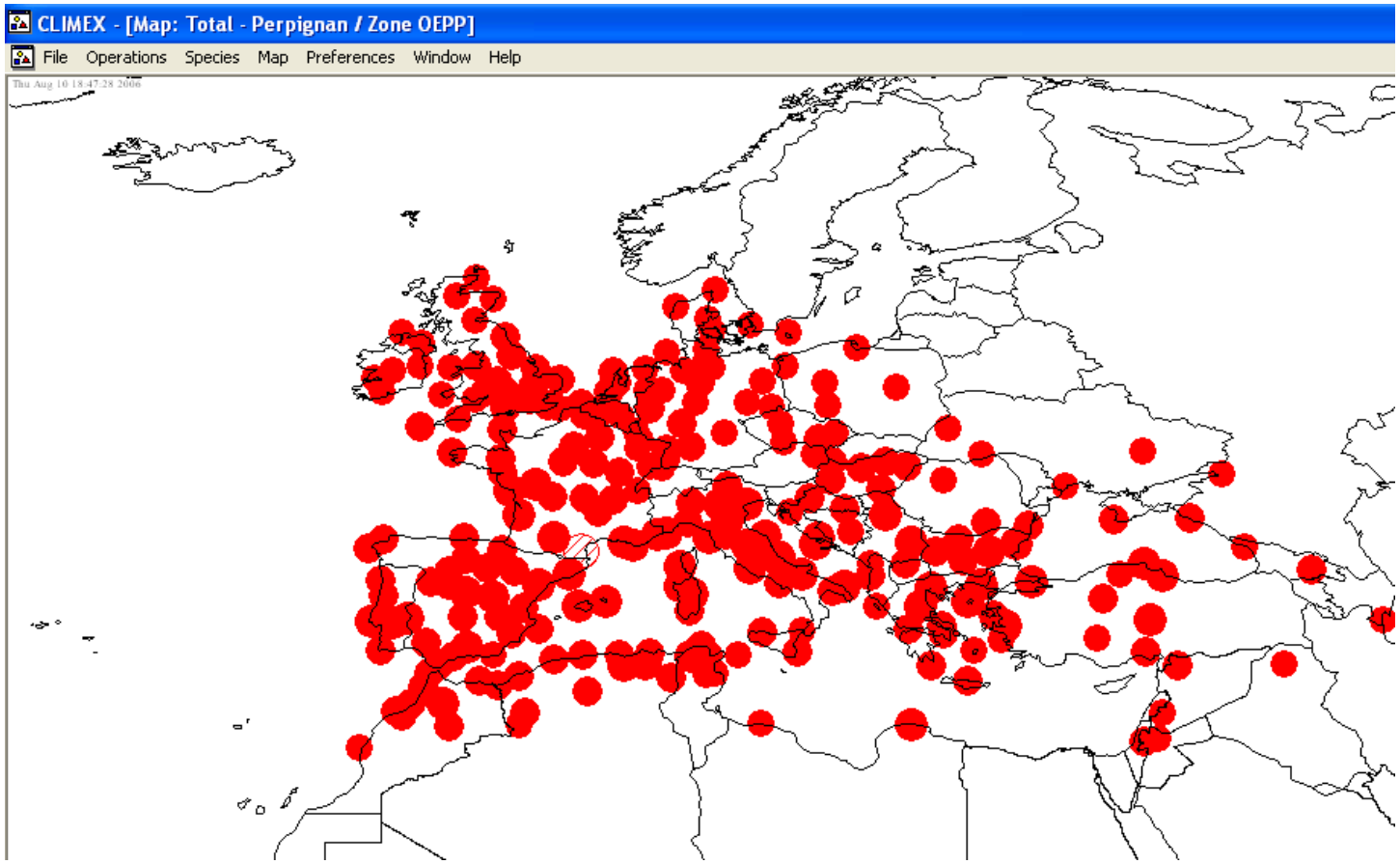
Stage 3: Pest risk Management

3.1 Is the risk identified in the Pest Risk Assessment stage an acceptable risk?	no	Medium to high economic and environmental risks and low-medium social risks have been identified.
3.2 Is the pathway that is being considered a commodity of plants and plant products?	no	
3.3 Is the pathway that is being considered the natural spread[1] of the pest?	yes	The major pathway of spread for *Senecio inaequidens* is natural dispersal by wind.
3.4 Is the pest already entering the PRA area by natural spread or likely to enter in the immediate future? (see answer to question 1.33)	yes	*S. inaequidens* is widely distributed in Western Europe.
3.5 Could entry by natural spread be reduced or eliminated by control measures applied in the area of origin?	no	The plant has already entred the PRA area.
3.6 Could the pest be effectively contained or eradicated after entry? (see answer to question 2.10)	Yes, depends of the invasion stage	Possible in the very early stage of invasion, before the first flowering. In later stages it becomes very difficult. Internal containment and/or eradication campaign are possible measures.
3.7 Was the answer "yes" to either question 3.5 or question 3.6?	yes	
3.37 Have all major pathways been analyzed (for a pest-initiated analysis)?	yes	
3.40 Consider the relative importance of the pathways identified in the "Conclusion of the probability of entry" section of the pest risk assessment.		The species is already present in many EPPO countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Italy, Hungary, the Netherlands, Slovenia, Spain, Switzerland, United Kingdom, and Northern-Ireland. Internal containment and/or eradication campaign are the only possible measures.
3.41 All the measures or combination of measures identified as being		The following measures/requirements are proposed:

[1] Natural spread includes movement of the pest by flight (of an insect), wind dispersal, transport by vectors such as insects or birds, natural migration.

appropriate for each pathway or for the commodity can be considered for inclusion in phytosanitary regulations in order to offer a choice of different measures to trading partners. Note that only the minimum, least stringent measure (or measures) capable of performing the task should be selected. Thus, if inspection is truly reliable, it should not be necessary to consider treatment or testing. Note also that some measures may counteract each other; for example the requirement for resistant cultivars may make detection more difficult. It may be that some or all of these measures are already being applied to protect against one or more other pests, in which case such measures need only be applied if the other pest(s) is/are later withdrawn from the quarantine.		• declaration that *S. inaequidens* is a quickly spreading important transformer invasive weed in W-Europe, • introduction into and spread within member states should be banned (e.g. by prohibition of import, prohibition of sale, prohibition of holding, prohibition of planting, prohibition on movement) • obligations to report findings • monitoring/surveillance • emergency plan It is necessary to address the possibility of involuntary introductions of the species and emergency plan. It would include a quick and early eradication response when the species is found in small numbers in order to prevent any further spread. It has to be combined with the measures described above. **Monitoring and review** Detailed information about the distribution and spread of *S. inaequidens* in the EPPO countries is available. This alien species can be considered as a model plant for the monitoring of alien plant species. The control of spreading, including eradication, is difficult in the heavily infested areas, e.g. Western-Europe. But until now this species has not appeared in some EPPO countries, that is why a monitoring system along international rail and motorway networks is necessary. In the early stage of the invasion, before establishment, eradication is possible. **No international regulation is recommended. Natural spread is the major pathway, measures are not justified and risk should be accepted because it is not manageable. National action is recommended, see PM n° . The pest does not qualify to be included on the EPPO List of pests recommended for regulation.**
3.42 In addition to the measure(s) selected to be applied by the exporting country, a phytosanitary certificate (PC) may be required for certain commodities. The PC is an attestation		Not relevant.

by the exporting country that the requirements of the importing country have been fulfilled. In certain circumstances, an additional declaration on the PC may be needed (see EPPO Standard PM 1/1(2): Use of phytosanitary certificates)		
3.43 If there are no measures that reduce the risk for a pathway, or if the only effective measures unduly interfere with trade (e.g. prohibition), are not cost-effective or have undesirable social or environmental consequences, the conclusion of the pest risk management stage may be that introduction cannot be prevented.		--


CLIMEX - [Map: Total - Perpignan / Zone OEPP]
File
Operations
Species
Map
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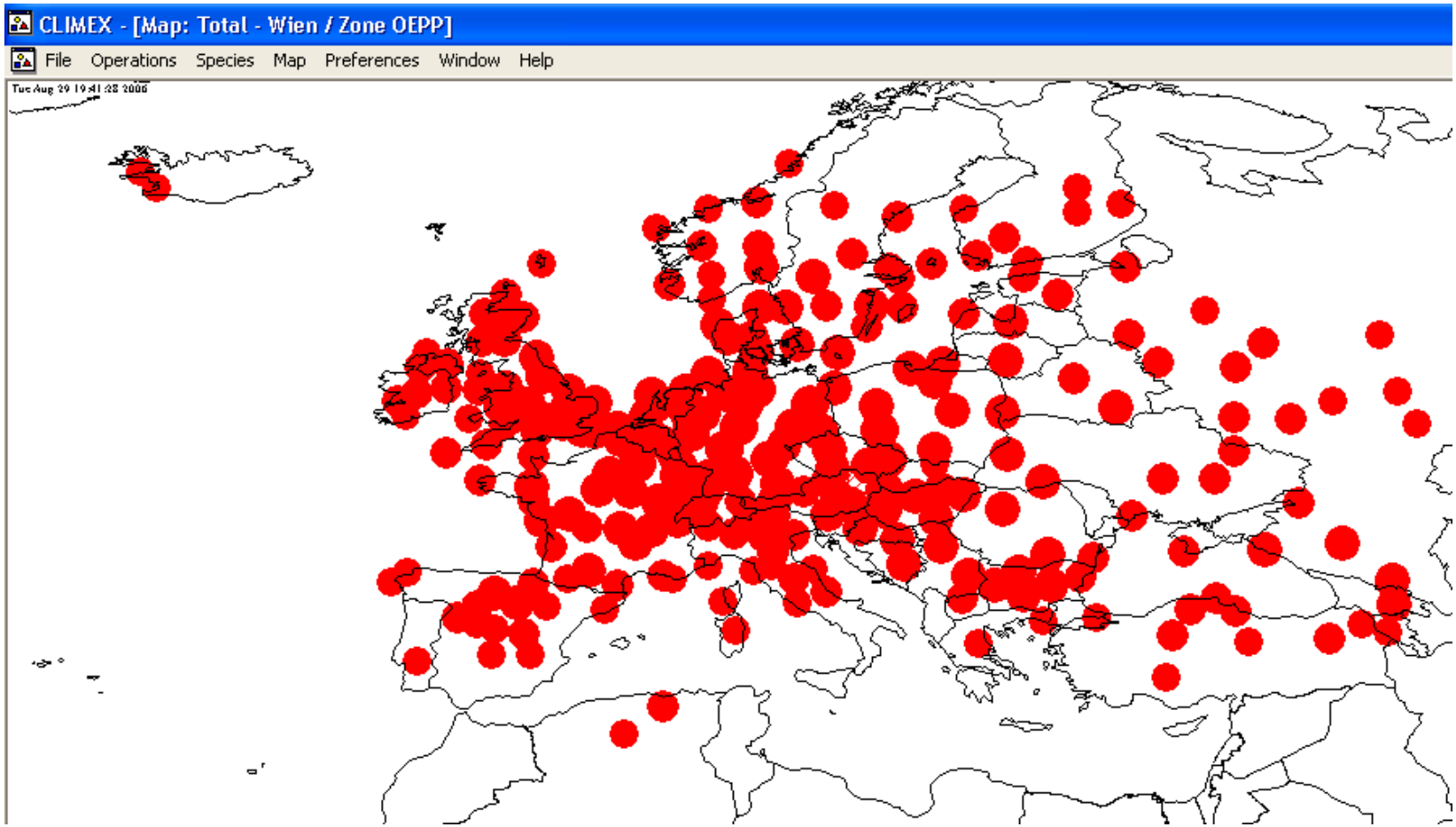

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