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## Participation of Poland in IUFRO studies on *Picea abies*

**Abstract:** The paper outlines the history of international provenance experiments on Norway spruce (*Picea abies* (L.) Karst.) conducted in Poland, starting from the first attempt at establishing trials in 1938, which was interrupted by the war. The most important experiments so far have been the IUFRO 1964/68 and IUFRO 1972 Inventory Provenance Tests with Norway Spruce.

**Additional key words:** Norway spruce, provenance tests

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### Brief outline of Polish contribution to IUFRO studies

Poland joined the International Union of Forest Research Organisations (IUFRO) in 1926, and already at the Stockholm Congress in 1929 there were 11 participants from Poland. In 1936, twelve delegates from Poland attended the Sopron Congress. The Congress appointed a 7-person Commission on Seed and Races of Forest Trees which included a representative from Poland, Dr. Stanisław Tyszkiewicz. The Commission decided that comparative studies of pine and spruce provenances from all over the range would be established in member countries. It is in connection with this work that Poland's participation in IUFRO research on the genetics of spruce started.

The oldest methodically out-planted provenance experiment with Norway spruce dates from 1938. At that time, IUFRO organised a series of trials in several countries, using jointly collected seed material from 36 origins in various parts of the species range. In 1939 another series was started with 14 origins, but this one, in view of the onset of World War II, included only a small number of co-operators. In 1964, IUFRO undertook a next series of experiments col-

lecting seed from 1100 origins, representing the whole range of the species. In 1972, a series of trials was established in several countries with seeds originating from Polish seed stands. This experimental series later acquired IUFRO status. All remaining trials with Norway spruce scattered throughout Europe were organised on a national basis, even though some of them included also some foreign provenances.

For the 1938 trial, Poland supplied seed from 6 stands (Białowieża, Istebna, Radom, Stolpce, Wilno and Dolina), the latter three being today beyond the eastern frontier of Poland, while the provenance known in literature as Pforten is from a place that now belongs to Poland (Forest District Brody, on the Nysa river). The seeds were sown in nurseries and preparations were made to establish several trials in Poland. However, the onset of the war and the departure or death of people responsible for the plans, have rendered them useless. The trials in Andrychów and Rycerka lost their documentation during the war. In 1941, an area was established in the Forest District Lubień, outside the natural range of spruce, however, in view of considerable mortality, soon after out-planting it was supplemented with spruce of unknown origin by people who did not realise the area

was an experiment, so now it is unsuitable for scientific use.

The Germans established a trial at a location which is now the Forest District Lubliniec (sub-district Dobrodzień – then under the name Guttentag), but finding it proved impossible due to a lack of documentation. The trial contained the full set of provenances. It was supervised by Prof. Werner Schmidt from Eberswalde in Germany, head of the IUFRO Commission on Seed and Races of Forest Trees. After the war, Prof. Schmidt lived in West Germany. When I wrote him a letter asking about the documentation of this trial, he replied that it was destroyed by the Poles after the war. The Guttentag Forest District archives are available, however, they hold no record of the trial. Either the East German authorities did not provide me with any answer to my query about the documentation likely to be held in Eberswalde. After the reunification of Germany and the opening of archives in Eberswalde, our German colleagues also failed to find records of the trial.

Poland did not participate in the 1939 trial. The trial includes a provenance under number 10 called “Poland”, but its actual origin is unknown.

For the 1964 trial, Poland supplied seed from 91 stands. Seedlings were grown in the Pein and Pein commercial nursery near Hamburg, Germany, for the whole experimental series, and in 1968 the transplants were delivered to 20 co-operators, including Prof. Stanisław Bałut from the Agricultural Academy of Kraków. The latter established his trial in the Academy experimental forest in Krynica, with the full set of 1100 provenances included.

For the 1972 trial, all the seeds were supplied by Poland, from 20 seed stands. In Poland, 5 trials were established (in Knyszyn, Kórnik, Siemianice, Niepołomice, Głuchów). The trial, which acquired IUFRO status, is coordinated from the Forest Research Institute in Warsaw (originally Stefan Kocięcki and later Jan Matras).

## Test reports

The results of the 1938 and 1939 trials were jointly summarised for IUFRO by me in several papers (Giertych 1976, 1979, 1984).

The 1964 trial had only one joint IUFRO report (Dietrichson et al. 1976), this, however, had no data from Poland or Hungary. In a later paper adding data from Poland and Hungary (Giertych 1978), I have summarised information on the best provenances and on all the Polish ones. I was searching for the most plastic provenances, that is those that perform well at many different locations. I have established a seed orchard for the most plastic provenance (Kolonowskie) and an outbreeding seed orchard for the 5 most plastic provenances (Giertych 1993).

The 1972 trial had no joint report except in the form of a table with latest height measurements, by provenance and location, supplied periodically to all participants by the coordinator.

## References

- Dietrichson J., Christophe C., Coles J.F., de Jamblinne A., Krutzsch P., König A., Lines R., Magnesen S., Nanson A., Vinš I. 1976. The IUFRO provenance experiment of 1964–1968 on Norway spruce (*Picea abies* (L.) Karst.). In: IUFRO Oslo Congress handout duplicated by the Norwegian Forest Research Institute, pp. 1–14.
- Giertych M. 1976. Summary results of the IUFRO 1938 Norway spruce (*Picea abies* (L.) Karst.) provenance experiment. Height growth. *Silvae Genetica* 25(5–6): 154–164.
- Giertych M. 1979. Norway spruce (*Picea abies* (L.) Karst.) provenance experiments in Eastern Europe. In: Proceedings of IUFRO Norway Spruce Meeting, Bucharest, pp. 15–27.
- Giertych M. 1984. Report on the IUFRO 1938 and 1939 provenance experiments on Norway spruce (*Picea abies* (L.) Karst.). Instytut Dendrologii PAN, Kórnik.
- Giertych M. 1993. Breeding of Norway spruce in Poland: from provenance tests to seed orchards. In: Proceedings of IUFRO S2.02.11 Symposium “Norway spruce provenances and breeding”, Riga, Latvia. Rone V. (ed.), pp. 193–199.